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NEW HAMPSHIRE
AGRICULTURAL EXPERIMENT STATION
DEPARTMENT OF CHEMISTRY

Analysis of Feeding-Stuffs

MADE FOR THE

STATE DEPARTMENT OF AGRICULTURE

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Experiment Station Chemists
AT NEW HAMPSHIRE COLLEGE
OF
AGRICULTURE AND THE MECHANIC ARTS,
DURHAM, N. H.

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NEW HAMPSHIRE AGRICULTURAL EXPERIMENT STATION

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The bulletins of the Experiment Station are published at irregular intervals and are sent *free* to all residents of New Hampshire requesting them.

STATE LAW.

An Act to Regulate the Sale of Concentrated Commercial Feeding-stuffs.

Section 1. Every manufacturer, company, or person, who shall sell, offer, or expose for sale or for distribution in this state any concentrated commercial feeding-stuff used for feeding farm live stock, shall furnish with each car or other amount shipped in bulk and shall affix to every package of such feeding-stuff, in a conspicuous place on the outside thereof, a plainly printed statement clearly and truly certifying the number of net pounds in the package sold or offered for sale, the name or trade-mark under which the article is sold, the name of the manufacturer or shipper, the place of manufacture, the place of business, and a chemical analysis stating the percentages it contains of crude protein, allowing one per centum of nitrogen to equal six and one-fourth per centum of protein, of crude fat, and of crude fibre, both constituents to be determined by the methods prescribed by the association of official agricultural chemists. Whenever any feeding-stuff is sold at retail in bulk or in packages belonging to the purchaser, the agent or dealer, upon request of the purchaser, shall furnish to him the certified statement named in this section.

Sect. 2. The term "concentrated commercial feeding-stuffs," as used in this act, shall include linseed meals, cottonseed meals, pea meals, cocoanut meals, gluten meals, gluten feeds, maize feeds, starch feeds, sugar feeds, dried brewers' grains, malt sprouts, hominy feeds, cerealine feeds, rice meals, oat feeds, corn and oat chops, wheat, rye and buckwheat bran and middlings, ground beef, or fish scraps, mixed feeds and all other materials of similar nature; but shall not include hays and straws, the whole seeds nor the unmixed meals made directly from the entire grains of wheat, rye, barley, oats, Indian corn, buckwheat and broom corn.

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SECT. 3. Before any manufacturer, company, or person shall sell, offer, or expose for sale in this state any concentrated commercial feeding-stuffs, he or they shall, for each and every feeding-stuff bearing a distinguishing name or trade-mark, file annually during the month of December with the secretary of the board of agriculture a certified copy of the statement specified in the preceding section, said certified copy to be accompanied, when the secretary shall so request, by a sealed glass jar or bottle containing at least one pound of the feeding-stuff to be sold or offered for sale, and the company or person furnishing said sample shall thereupon make affidavit that said sample corresponds within reasonable limits to the feeding-stuff which it represents, in the percentage of protein and fat which it contains.

SECT. 4. Each manufacturer, importer, agent, or seller of any concentrated commercial feeding-stuffs, shall pay annually during the month of December to the secretary of the board of agriculture an analysis fee of fifteen dollars, for each brand offered for sale within the state. Whenever a manufacturer, importer, agent, or seller of concentrated commercial feeding-stuff desires at any time to sell such material and has not paid the analysis fee therefor in the preceding month of December, as required by this section, he shall pay the analysis fee prescribed herein before making any such sale. The amount of analysis fees received by said secretary pursuant to the provisions of this section shall be paid by him to the treasurer of the State of New Hampshire. The treasurer of the State of New Hampshire shall pay from such amount when duly approved the moneys required for the expense incurred in making the inspection required by this act and enforcing the provisions thereof. The secretary of the board of agriculture shall report biennially to the legislature the amount received pursuant to this act, and the expense incurred for salaries, laboratory expenses, chemical supplies, traveling expenses, printing, and other

necessary matters. Whenever the manufacturer, importer, or shipper of concentrated commercial feeding-stuff shall have filed the statement required by section 1 of this act and paid the analysis fee as prescribed in this section, no agent or seller of such manufacturer, importer, or shipper shall be required to file such statement or pay such fee.

SECT. 5. The secretary of the board of agriculture shall annually cause to be analyzed at the New Hampshire College Agricultural Experiment Station, at least one sample, to be taken in the manner hereinafter prescribed, of every concentrated commercial feeding-stuff sold or offered for sale under the provisions of this act. Said secretary shall cause a sample to be taken, not exceeding two pounds in weight, for said analysis, from any lot or package of such commercial feeding-stuff which may be in the possession of any manufacturer, importer, agent, or dealer in this state; but said sample shall be drawn in the presence of the parties in interest, or their representatives, and taken from a parcel or a number of packages, which shall not be less than ten per centum of the whole lot sampled, and shall be thoroughly mixed, and then divided into two equal samples, and placed in glass vials and carefully sealed and a label placed on each stating the name of the party from whose stock the sample was drawn and the time and place of drawing, and said label shall also be signed by the person taking the sample, and by the party or parties in interest or their representatives at the drawing and sealing of said samples; one of said duplicate samples shall be retained by the secretary and the other by the party whose stock was sampled, and the sample or samples retained by the secretary shall be for comparison with the certified statement named in section 3 of this act. The result of the analysis of the sample or samples so procured, together with such additional information as circumstances advise, shall be published in reports or bulletins from time to time.

SECT. 6. Any manufacturer, importer, or person who shall sell, offer or expose for sale or for distribution in this state any concentrated commercial feeding-stuff, without complying with the requirements of this act, or any feeding-stuff which contains substantially a smaller percentage of the constituents than are certified to be contained, shall, on conviction in a court of competent jurisdiction, be fined not more than one hundred dollars for the first offense, and not more than two hundred dollars for each subsequent offense.

SECT. 7. Any person who shall adulterate any kind of meal or ground grain with milling or manufacturing offals, or any other substance whatever, for the purpose of sale, unless the true composition, mixture, or adulteration thereof is plainly marked or indicated upon the package containing the same or in which it is offered for sale; or any person who knowingly sells, or offers for sale, any meal or ground grain which has been so adulterated unless the true composition, mixture, or adulteration is plainly marked or indicated upon the package containing the same, or in which it is offered for sale, shall be fined not less than twenty-five or more than one hundred dollars for each offense.

SECT. 8. Whenever said secretary becomes cognizant of the violation of any of the provisions of this act he shall prosecute the party or parties thus reported; but it shall be the duty of said secretary, upon thus ascertaining any violation of this act, to forthwith notify the manufacturer, importer, or dealer in writing, and give him not less than thirty days thereafter in which to comply with the requirements of this article; but there shall be no prosecution in relation to the quality of any concentrated commercial feeding-stuff if the same shall be found substantially equivalent to the certified statement named in section 3 of this article.

SECT. 9. This act shall take effect December first, nineteen hundred and one.

THE CONSTITUENTS OF FEEDING-STUFFS.

In the complete chemical analysis of a feeding-stuff the following determinations are made: moisture, ash, protein, fat, fibre, and nitrogen-free extract. The value of a feeding-stuff is generally based on the amount of protein and fat it contains. For that reason these two constituents are often the only ones determined. We are, however, beginning to realize that while the amount of protein and fat is important, at the same time the carbohydrates are also very important and in many classes of feeding-stuffs form the chief source of value.

MOISTURE.

Water is present to some extent in all classes of feeds. The per cent in most cases varies between five and fifteen. The amount varies with the nature of the feed, the process of manufacture, and the manner of storage.

ASH.

The ash of a feed is the residue left after burning off the organic matter. It represents the inorganic or mineral constituent of the plant. This part of the feed furnishes the material for the bones of the animal.

CRUDE PROTEIN.

By crude protein is meant that portion of a feeding-stuff which contains nitrogen. Nitrogenous feeds build up muscular tissue and the proteins are of the greatest importance in determining the value of a feed. Most of the crude protein in the plant is found at the point of growth, or in the leaves and seeds.

CRUDE FAT.

The term crude fat is rather arbitrarily used to include all the substances of the feed soluble in dry ether or similar solvents. They are the pure fats, such as cottonseed oil, linseed oil, etc., and the waxes, resins, chlorophyl, etc. These latter substances are generally so small in amount that for practical purposes the ether extract of a feed represents the amount of fat which it contains. The fats are readily digested and rank next to protein in value.

FIBRE.

The crude fibre in a feeding-stuff is that portion which goes to make up the cell-walls and structural material of the plant. It is fairly indigestible and in general a *high* percentage of crude fibre indicates a *low-grade* feed.

NITROGEN-FREE EXTRACT.

The nitrogen-free extract is that portion of the feed readily extracted by water or dilute acids and composed of non-nitrogenous materials. The principal substances included under the term are the starches and sugars.

CARBOHYDRATES.

The term carbohydrates is sometimes used in speaking of feeding-stuffs. It is generally used to include both crude fibre and nitrogen-free extract. A feeding-stuff which contains small amounts of moisture, ash and crude fibre must be classed as high grade, if digestible. When these constituents are present in small amounts the total amount of the valuable constituents—protein, fat and nitrogen-free extract—must be high.

THE VALUE OF A CHEMICAL EXAMINATION OF COMMERCIAL FEEDING-STUFFS.

The chemical analysis of feeding-stuffs is valuable in many ways, chief of which are the following:

1. It shows whether or not the guarantees of the manufacturer are correct.

2. It protects the buyer against the unscrupulous manufacturer or retailer.

3. It aids the buyer in deciding money values in purchasing feed.

4. It affords a clue as to the nature of the constituents of the feed.

5. It furnishes data for making up any desired feeding ration.

6. It enables the consumer to decide whether it is a useful feed for his particular purpose.

The following definitions are given for the use of the consumer and represent the terms used for the particular feeding-stuffs by the general trade:

GENERAL DEFINITIONS.

COTTONSEED MEAL.

Cottonseed meal is the meal obtained from the cottonseed kernel after the extraction of the oil. The following standard classification adopted by the Inter-State Cottonseed Crushers' Association will interest the buyer of cottonseed meal:

"*Choice cottonseed meal* must be finely ground, perfectly sound and sweet in odor, yellow, free from excess of lint, and by analysis must contain forty-nine per cent of combined protein and fat."

"*Prime cottonseed meal* must be finely ground, of sweet odor, reasonably bright in color, yellow, not brown or reddish, free from lint, and contain at least forty-six per cent of combined protein and fat."

"*Good cottonseed meal* must be finely ground, of sweet odor, reasonably bright in color, and by analysis must contain at least forty-three per cent of combined protein and fat."

LINSEED MEAL.

Linseed meal, oil meal, or flaxseed meal is the ground residue from the extraction of oil from flaxseed. The oil is extracted by two processes, known as the old process and the new process. In the old process the oil is simply expressed from the seed by hydraulic pressure. In the new process naphtha or a similar solvent is used to extract the oil. On account of the extraction being more complete when a solvent is used, the new process generally contains less fat than the old process, while they contain about the same per cent protein.

WHEAT PRODUCTS.

Wheat bran is the coarse outer covering of the wheat berry. It contains much of the fibrous material of the grain, but is rich in protein.

Middlings or shorts. These terms have generally the same meaning in the trade, and are the fine particles of the outer bran as well as considerable starchy matter. They are the intermediate product between bran and flour.

Red dog is a low-grade wheat flour containing the finer particles of bran.*

Wheat mixed feed or shipstuff is a mixture of the by-products from the milling of the wheat berry.*

Mixed feed. The term mixed feed has been so generally used to mean a mixture of wheat products that it is practically a misrepresentation to use the term to mean a mix-

ture of other cereals. A feed carrying less than fifteen per cent protein and four per cent fat cannot be a good mixed feed.

CORN PRODUCTS.

Corn bran is the outer coating of the corn kernel.* It has a low feeding value.

Corn and cob meal is the ground whole ear of corn. In this case the cobs are not considered an adulterant.

Gluten meal is a product obtained in the manufacture of starch and glucose from corn. It is the flinty portion of the kernel which lies in its outer circumference just beneath the hull.*

Gluten feed is a product obtained in the manufacture of starch and glucose from corn and is a mixture of gluten meal and corn bran to which may be added the residue resulting from the evaporation of the so-called "steep water."*

Corn feed meal is the siftings obtained in the manufacture of cracked corn and table meal made from the whole grain.*

Hominy meal, feed or chop is the bran and germs of the corn kernel and may contain a part of the starchy portion of the kernel.*

DISTILLERY AND BREWERY BY-PRODUCTS.

Distillers' dried grains are the dried residue from cereals obtained in the manufacture of alcohol and distilled liquors.*

Brewers' dried grains are dried barley grains after they have been malted and the soluble sugar and dextrin extracted.

Malt sprouts are the sprouts of the barley grain.*

MISCELLANEOUS PRODUCTS.

Alfalfa meal is the entire alfalfa hay ground and does not contain an admixture of ground alfalfa straw or other materials.*

Meat meal is finely ground beef scraps.*

Buckwheat shorts or middlings are that portion of the buckwheat grain immediately inside of the hull after separation from the flour.*

Molasses feeds are generally a mixture of some filler such as oat hulls, oat clippings, flax bran, or grain screenings with molasses and a concentrated feed, such as cottonseed meal, brewers' grains, or malt sprouts.

Filler is a term used to designate certain by-products generally of little feeding value used to give weight and bulk to concentrated feeds in the manufacture of compounded feeds. Among the materials commonly used as fillers are: ground corn cobs, peanut hulls, oat hulls, cotton seed hulls, grain screenings, flax plant stems and pods, rice hulls, etc. These materials are ground so fine that their presence is discovered only by careful examination, sometimes only with the aid of a microscope. Most fillers contain relatively small amounts of crude protein and crude fat and large amounts of crude fibre. The presence of a filler in some cases may actually decrease the value of the concentrates present.

Compound feeds are those feeds bearing trade names which are not descriptive in any way of the materials which have been used in their manufacture. They may contain any mixture of stock feed materials and therefore cannot be compared with standards of average composition. They often represent various industrial by-products such, for example, as are obtained in the manufacture of breakfast foods.

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* Definitions marked (*) are those adopted by the Association of Feed Control Officials of the United States.

FEEDING-STUFFS INSPECTION AND ANALYSIS. 1914.

The samples of the various brands of feeding-stuffs for the 1914 inspection were collected by Mr. C. J. Bickford under the direction of the retiring State Board of Agriculture and the new Commissioner of Agriculture. In all 278 samples have been analyzed at the Experiment Station.

It has been the custom for the Experiment Station to analyze miscellaneous samples of feeding-stuffs without cost to the person sending the samples. This practice will be continued provided the person sending the samples will at the same time send the following information:

1. Name of the brand of feeding-stuff.
2. Name and address of the manufacturer.
3. Name and address of the dealer.
4. Guarantee under which feed is sold.
5. Number of bags sampled.
6. Number of bags in lot.

Until the above information can be obtained no analyses will be made.

In taking samples, equal representative portions should be drawn from at least six bags and thoroughly mixed. More bags should be sampled when large lots are involved. A pound of the mixture should be sent for analysis. Samples should be sent in a tight box or a pint fruit jar.

It is worthy of attention to note here at least one sharp practice of the feed trade. Some jobbers are selling their customers cotton seed meal guaranteed to carry 41 per cent. protein. When the meal arrives it is found to be guaranteed 38.62 to 43 per cent. protein. The guarantee bears the statement that a rebate of 50 cents per unit will be paid when the meal fails to meet the invoice guarantee. If the meal is accepted it must be accepted on a 41 per cent. basis, and the retailer is obliged to bear the inconvenience

and expense of having the meal analyzed. The practice is both unfair and sharp. The jobber buys the meal on a 38.62 per cent. basis and sells to the retailer on a 6.1 per cent. advance. If the jobber gets caught he simply pays the rebate and appears virtuous; if he does n't get caught he pockets the 6.1 per cent. profit. The ultimate consumer, the farmer, pays the bill. A matter of 6.1 per cent. means but little to the individual consumer but it aggregates a very large sum where the jobber handles thousands and thousands of tons of the meal. A good many of our dairymen are paying the price of 41 per cent. meal for meal guaranteed to carry only 38.62 per cent. protein. There seems to be no way to get at these exceedingly clever jobbers except through the consumer. There can be no obvious gain for the consumer to contribute 6.1 per cent. additional net profit to the jobber. In some instances it appears that the retailer is taking advantage of the consumer and is making the extra profit himself. The average consumer who reads the guarantee and "rebate" clause may not suspect that often the "invoice" guarantee to the retailer is higher than the guarantee on the tags. The retailer usually does n't care much because he simply adds commission to his cost. These facts are noted here so that the consumer of cotton seed meal may have an opportunity to know the game through which he is made a victim.

The brands of feeding-stuffs sampled the present year are not different from what have been found other years. There are many first-class products on the market and there seems to be no reason why the careful feeder cannot secure first class products for his purpose.

There are also certain very poor feeding-stuffs on the market. Most of these contain large quantities of crude fibre and small quantities of protein. It is doubtful if some of the products can be used profitably for any purpose. This must be true because of the low quality of the goods and the relatively high prices for which they are sold.

It is difficult to understand why a part of the consuming public will continue to purchase low grade feeds which have an unknown feeding value and pay almost, if not altogether, as high a price as must be paid for standard products which have a known feeding value. Freight rates and commissions are no less on oat hulls, corn cobs and sphagnum moss than on wheat feeds, brewers' and distillers' grains, cotton seed meal, etc. However, some very inferior products come on to our market year after year.

The writers wish to acknowledge the assistance rendered by Messrs. H. M. Eastman, M. H. Broggini, G. L. Ham, and A. J. Grant, in preparing the following analytical data.

Name of Sample.	Manufactured by	Address.	Protein.		Fat.		Crude Fibre.	
			Found.	Guaranteed.	Found.	Guaranteed.	Found.	Guaranteed.
WHEAT FEEDS.								
Trojan Middlings	Allen & Wheeler Co	Troy, Ohio	17.16	15.00	5.00	4.00	.....	6.00
Trojan Mixed Feed	Allen & Wheeler Co	Troy, Ohio	16.81	14.50	4.79	4.00	.....	8.00
Middlings	Ansted & Buck Co	Springfield, Ohio	19.18	14.50	4.61	4.00	.....	4.50
Wm. Tell Bran	Ansted & Buck Co	Springfield, Ohio	14.80	14.00	4.71	3.00	.....	9.00
Atlas Bran	Atlas Flour Mills Co	Milwaukee, Wis	15.24	15.00	5.59	3.50	12.01	12.00
Fancy Winter Mixed Feed	C. W. Bailey & Co	Montpelier, Vt	16.99	16.00	4.89	3.70	.....	8.50
Fancy Low Grade Flour Middlings	Barber Milling Co	Minneapolis, Minn.	18.04	18.00	4.21	5.00	.91	4.00
Winona Bran	Bay State Milling Co	Winona, Minn	16.64	15.00	5.57	5.00	.....	11.00
Choice Bran	L. G. Campbell Milling Co	Owatonna, Minn	16.55	13.40	5.38	4.50	.....	12.20
Commander Standard Middlings	Commander Mills	Minneapolis, Minn.	17.43	15.00	6.06	4.00	.....	9.00
Pure Wheat Flour Middlings	Consolidated Milling Co	Minneapolis, Minn.	18.48	15.50	5.81	4.50	.....	6.00
Bran (Winter Wheat)	Wm. A. Coombs Milling Co	Coldwater, Mich	15.33	14.00	4.68	3.00	.....	.....
Middlings (Winter Wheat)	Wm. A. Coombs Milling Co	Coldwater, Mich	16.73	15.00	4.57	3.00	5.95	.....
Mixed Feed (Winter Wheat)	Wm. A. Coombs Milling Co	Coldwater, Mich	16.99	16.00	5.44	3.00	.....	.....
Monogram Fancy Bran	Chas. M. Cox Co	Boston, Mass	15.50	15.00	5.31	4.00	.....	10.00
Wirthmore Middlings	Chas. M. Cox Co	Boston, Mass	16.90	15.00	5.15	4.00	.....	7.00
Wirthmore Wheat Feed	Chas. M. Cox Co	Boston, Mass	16.55	16.00	5.30	4.00	.....	7.00
Tiger Middlings	Detroit Milling Co	Detroit, Mich	17.08	16.00	5.50	5.00	.....	.....
Bran	Dominion Flour Mills Co	Montreal, Can	16.81	15.00	5.87	4.75	.....	11.00
Boston Mixed Feed	Duluth Superior Milling Co	Duluth, Minn	16.99	15.00	5.39	4.00	8.80	9.50
Duluth Imperial Bran	Duluth Superior Milling Co	Duluth, Minn	16.20	15.00	5.57	4.00	9.32	11.25
Red Dog Flour Middlings	Duluth Superior Milling Co	Duluth, Minn	18.39	17.00	6.14	4.50	.....	4.00
Bran and Screenings	B. A. Eckhart Milling Co	Chicago, Ill	14.80	14.00	5.30	3.00	9.24	.....
E-A-Co Winged Horse Bran	Everett, Aughenbauck & Co	Waseca, Minn	16.29	14.00	5.37	3.00	.....	12.00
E-A-Co Winged Horse Mixed Feed	Everett, Aughenbauck & Co	Waseca, Minn	17.51	15.00	5.30	3.00	7.70	12.00
Lucky Spring Bran	Federal Milling Co	Lockport, N. Y.	15.85	15.00	5.52	4.50	.....	11.00
Sphinx Fancy Flour Middlings	Federal Milling Co	Lockport, N. Y.	16.73	17.00	5.69	4.50	.....	9.00
Sphinx Fancy Mixed Feed	Federal Milling Co	Lockport, N. Y.	16.64	15.50	5.38	4.00	.....	9.00
Grafton Mixed Feed	Grafton Roller Mill Co	Grafton, No. Dak.	16.99	15.50	4.51	6.10	.....	11.90
Grafton Wheat Feed	Grafton Roller Mill Co	Grafton, No. Dak.	16.64	15.40	5.29	4.50	.....	9.30
Xtragood Mixed Feed	Griswold & Mackinnon	St. Johnsbury, Vt.	19.26	16.00	5.12	4.00	.....	7.00

WHEAT FEEDS.—*Continued.*								
Red Dog Flour	The Gwinn Milling Co	Columbus, Ohio	20.40	.....	3.98	.....	2.41	.....
Wheat Bran	The Gwinn Milling Co	Columbus, Ohio	16.38	15.70	4.33	4.40	.....	1.80
Wheat Middlings	The Gwinn Milling Co	Columbus, Ohio	17.08	17.00	5.70	4.00	.....	8.00
Hecker's Standard Middlings	Hecker-Jones-Jewell Milling Co.	Buffalo, N. Y.	17.86	16.00	6.99	5.50	8.53	8.00
Purity Mixed Feed	The Wm. S. Hills Co	Boston, Mass.	16.90	15.00	5.67	4.00	.....	10.00
Ben-Hur Flour Middlings	Hennepin Mill Co	Minneapolis, Minn.	18.13	17.00	5.57	5.00	.....	6.00
Pure Wheat Middlings	John Hoffer Flouring Mill Co.	Steelton, Pa.	17.16	.....	3.95	.....	.....	.....
Robin Hood Bran	Robbin Hood Mills, Ltd.	Canada	16.25	16.25	5.38	5.20	.....	9.80
Vixen Flour Middlings	E. C. & W. L. Hopkins (Agt.)	Greenfield, N. H.	20.49	.....	3.96	.....	.....	.....
Pure Flaky Bran	Hubbard Milling Co	Mankato, Minn.	16.38	15.00	5.80	4.80	.....	11.50
Standard Fine Middlings	Hubbard Milling Co	Mankato, Minn.	16.90	14.50	6.22	5.10	.....	10.00
Sunshine Mixed Feed	Hunter-Robinson-Wing Mill. Co	St. Louis, Mo.	15.85	14.50	4.45	4.00	7.12	2.06
Jenks White Middlings	The Huron Milling Co	Harbor Beach, Mich.	14.19	13.00	3.43	3.50	.....	2.50
Standard Spring Wheat Bran and Mill Run Screenings	Indiana Milling Co	Terre Haute, Ind.	16.51	14.00	5.31	4.00	.....	11.00
Paleface Bran	Kehlor Flour Mills Co	St. Louis, Mo.	17.08	14.00	4.56	3.50	5.88	10.00
Anchor Mixed Feed	Kemper Mill & Elevator Co	Kansas City, Mo.	16.11	16.00	4.91	4.00	.....	10.00
Carnation Gray Middlings	Kemper Mill & Elevator Co	Kansas City, Mo.	19.26	16.00	5.48	4.30	.....	6.00
Buckwheat Middlings	Larrowe Milling Co	Detroit, Mich.	11.91	.....	2.00	.....	25.08	.....
Snow Flake Mixed Feed	Lawrenceburg Roller Mills Co.	Lawrenceburg, Ind.	17.43	15.20	4.26	4.30	.....	8.00
Elmco Fancy Bran	Listman Mill Co	La Crosse, Wis.	15.94	15.80	4.91	4.72	.....	8.43
Waseo Bran	Lyon & Greenleaf	Wauseon, Ohio.	14.80	14.50	5.15	4.00	.....	9.50
Waseo Middlings	Lyon & Greenleaf	Wauseon, Ohio.	16.99	16.00	5.49	4.00	.....	6.00
Waseo Mixed Feed	Lyon & Greenleaf	Wauseon, Ohio.	15.06	15.00	5.28	4.00	.....	8.00
Wheat Bran	J. G. Lysle Milling Co	Leavenworth, Kan.	14.71	15.00	4.23	4.00	.....	10.00
Flour Middlings	Medelia Roller Mills C. S. Christensen Co	Madelia, Minn.	16.85	14.25	5.59	3.00	.....	5.35
Bran	Maple Leaf Milling Co	Canada	14.89	.....	5.22	.....	.....	.....
Rex Middlings	Maple Leaf Milling Co	Canada	16.73	16.00	5.58	5.50	.....	10.00
Brooks' Fancy Mixed Feed	A. H. McLeod Milling Co	St. Johnsbury, Vt.	17.18	16.00	5.34	4.00	.....	8.00
Frese Ground Mixed Feed	Geo. O. Moon & Co	Binghampton, N. Y.	16.81	16.50	5.36	5.00	8.89	7.00
Mystic Bran	Mystic Milling Co	Sioux City, Iowa	15.85	14.00	4.89	4.50	.....	15.00
Osota Pure Wheat Bran and Pure Wheat Middlings	National Milling Co	Toledo, Ohio	17.08	17.00	5.00	4.50	.....	8.00
Pennant Mixed Feed	National Milling Co	Toledo, Ohio	17.41	16.00	4.82	3.75	.....	8.50
Pure Wheat Bran	National Milling Co	Toledo, Ohio	16.11	16.50	5.36	5.50	11.42	12.50
Hiawatha, Special Mixed Feed	New England Flour Co	Boston, Mass.	16.87	15.00	5.21	3.00	.....	10.00
Powerful, Standard Bran	New England Flour Co	Boston, Mass.	14.10	14.00	5.83	3.00	.....	12.00
Seal of Minnesota Bran	New Prague Flouring Mills Co.	New Prague, Mo.	14.94	14.60	5.58	4.76	10.85	11.00

Name of Sample.	Manufactured by	Address.	Protein.		Fat.		Crude Fibre.	
			Found.	Guaranteed.	Found.	Guaranteed.	Found.	Guaranteed.
WHEAT FEEDS.—*Continued.*								
Low Grade Flour Middlings	Niagara Falls Milling Co	Niagara Falls, N. Y.	16.20	16.00	3.85	3.00	1.45	1.25
Bran	Northwestern Consol. Mill. Co.,	Minneapolis, Minn.	16.64	14.50	5.62	4.00	.....	11.00
Flour Middlings	Northwestern Consol. Mill. Co..	Minneapolis, Minn.	16.38	15.50	6.20	4.50	.....	6.00
Middlings	Northwestern Consol. Mill. Co..	Minneapolis, Minn.	15.41	15.00	6.02	4.50	.....	10.00
Mixed Feed	Northwestern Consol. Mill. Co..	Minneapolis, Minn.	17.43	15.00	5.75	4.00	.....	10.00
Planet Feed	Northwestern Consol. Mill. Co..	Minneapolis, Minn.	17.51	15.00	5.99	4.00	6.70	8.00
XXX Comet	Northwestern Consol. Mill. Co..	Minneapolis, Minn.	18.04	16.50	6.43	4.00	.....	3.00
Pillsbury's Bran	Pillsbury Milling Co	Minneapolis, Minn.	15.76	14.50	6.12	4.00	10.80	11.00
Pillsbury's Fancy Mixed Feed	Pillsbury Milling Co	Minneapolis, Minn.	17.25	16.00	5.14	4.50	.....	8.00
B Middlings	Pillsbury Milling Co	Minneapolis, Minn.	15.85	15.00	5.24	4.00	.....	8.00
Pillsbury XX Daisy	Pillsbury Milling Co	Minneapolis, Minn.	17.51	10.00	4.84	4.00	.....	4.00
Normal, Flour Middlings	C. Plummer (Agent)	E. Jaffrey, N. H..	17.86	.....	4.76	.....	.....	.....
Champion Mixed Feed	Portland Milling Co	Portland, Mich	16.99	13.56	5.03	8.47	6.37	3.58
Middlings	Porter & Co	Winona, Minn	16.55	15.00	6.42	4.50	.....	10.00
Wheat Bran	Postum Cereal Co., Ltd	Battle Creek, Mich.	15.68	15.00	4.01	2.00	.....	24.00
Bran	C. D. Prescott (Agent)	Greenville, N. H...	15.59	.....	4.61	.....	10.03	.....
Bell Cow Middlings	Quaker Oats Co	Chicago, Ill	16.20	15.30	5.77	5.50	.....	7.60
Buckeye Mixed Feed	Quaker Oats Co	Chicago, Ill	19.00	15.50	5.57	4.50	.....	8.50
Middlings	A. H. Randall Mill Co	Tekonsha, Mich	16.64	14.00	4.96	5.00	.....	3.50
Bran	Russell-Miller Milling Co	Minneapolis, Minn.	15.85	13.00	5.27	4.00	.....	11.00
Occident Wheat Feed	Russell-Miller Milling Co	Minneapolis, Minn.	18.48	15.00	5.81	4.50	6.81	10.00
Regular Wheat Feed	Russell Flour Co	Albany, N. Y	17.16	15.00	5.48	4.50	.....	10.00
Standard Middlings	Russell-Miller Milling Co	Minneapolis, Minn.	17.25	15.00	6.09	4.00	.....	9.00
Gold Mine Wheat Feed	Sheffield-King Milling Co	Minneapolis, Minn.	17.08	15.90	5.55	4.80	.....	8.80
Shredded Wheat Waste	The Shredded Wheat Co	Niagara Falls, N. Y.	12.61	10.00	2.16	1.50	.....	2.00
Rich Bran or Mill Run	Standard-Tilton Milling Co	St. Louis, Mo	16.73	14.00	4.85	4.00	7.67	.....
Star Wheat Bran	Star & Crescent Milling Co	Chicago, Ill	16.11	15.00	5.17	4.00	.....	10.00
Wheat Middlings	F. W. Stock & Sons	Hillsdale, Mich	16.55	15.00	6.62	4.00	.....	8.00
Winter Wheat Bran	F. W. Stock & Sons	Hillsdale, Mich	15.33	15.00	4.39	4.00	.....	10.00
Superior Wheat Feed	F. W. Stock & Sons	Hillsdale, Mich	16.55	16.00	5.10	4.50	.....	7.00
Try-Me Mixed Feed	Sparks Milling Co	Alton, Ill	16.55	16.00	4.62	3.50	.....	8.00

WHEAT FEEDS.—*Continued.*								
Fine White Middlings	David Stott	Detroit, Mich.	15.85	16.00	4.30	5.00	.....	6.00
Heavy Mixed Feed	David Stott	Detroit, Mich.	16.64	16.00	5.00	4.00	.....	9.00
Honest Mixed Feed	David Stott	Detroit, Mich.	17.34	16.50	5.06	5.00	.....	.....
Pennant Middlings	David Stott	Detroit, Mich.	17.51	17.00	5.11	5.50	.....	7.00
Stott's Pure Spring Wheat Bran	David Stott	Detroit, Mich.	16.46	10.00	4.93	4.00	.....	10.00
Stag Flour	David Stott	Detroit, Mich.	15.00	15.00	2.38	1.50	.....	3.00
Middlings	Stratton & Co	Concord, N. H.	15.76	16.20	4.80	4.26	.....	6.50
Mill Bran	Stratton & Co	Concord, N. H.	16.55	.....	4.66	.....	.....	.....
Mixed Feed	Stratton & Co	Concord, N. H.	14.19	14.00	4.77	4.00	7.09	9.00
Chippewa Fancy Middlings	Traders & Producers Supply Co.	Buffalo, N. Y.	16.99	16.00	5.22	5.50	.....	10.00
Wheat Bran	Union Mill Co	Cedar Falls, Iowa.	14.71	14.00	5.50	4.00	9.98	10.50
Farmers' Favorite Cow Feed	Valley City Milling Co	Grand Rapids, Mich.	17.33	14.18	4.98	4.25	7.71	7.50
Farmers' Favorite Middlings	Valley City Milling Co	Grand Rapids, Mich.	15.94	15.50	4.99	4.25	5.92	5.50
Vimco Winter Wheat Bran	Valley City Milling Co	Grand Rapids, Mich.	16.55	14.38	5.31	5.00	.....	10.00
Middlings	Voigt Milling Co	Grand Rapids, Mich.	15.59	.....	4.84	.....	.....	.....
Mixed Feed	Voigt Milling Co	Grand Rapids, Mich.	16.55	16.50	4.78	5.50	.....	5.00
Pure Bran	Voigt Milling Co	Grand Rapids, Mich.	17.69	17.00	4.58	6.50	.....	7.50
Adrian Red Dog Flour Middlings	Washburn-Crosby Co	Minneapolis, Minn.	19.18	17.00	6.21	5.00	.....	4.00
Coarse Bran	Washburn-Crosby Co	Minneapolis, Minn.	14.63	14.50	5.95	4.00	.....	11.00
Flour Middlings	Washburn-Crosby Co	Minneapolis, Minn.	17.43	17.00	5.20	5.00	.....	6.00
Standard Pure Hard Wheat Middlings	Washburn-Crosby Co	Minneapolis, Minn.	16.73	15.00	6.00	4.00	6.19	5.50
Wheat Bran with Ground Screenings	Washburn-Crosby Co	Minneapolis, Minn.	16.64	14.50	5.81	4.00	10.73	11.00
Wheat Superior Mixed Feed	Washburn-Crosby Co	Minneapolis, Minn.	16.46	16.00	5.69	4.50	.....	9.00
Bran	Webster Mill Co	Webster, So. Dak.	16.11	15.10	5.46	4.60	.....	11.70
Mixed Feed	Webster Mill Co	Webster, So. Dak.	16.73	15.30	5.89	4.80	.....	10.40
Bran	Western Canada Flouring Mills Co.		16.64	16.82	5.42	5.50	.....	10.86
Kent Mixed Feed	The Williams Bros. Co	Kent, Ohio	14.28	12.00	3.87	2.00	6.63	8.00
COTTON SEED MEAL.								
Red Tag Cottonseed Meal	American Cotton Oil Co	Clarksdale, Miss.	39.69	38.55	9.11	7.00	.....	11.50
Cottonseed Meal	American Oil Co	Americus, Ga.	39.84	.....	7.18	.....	.....	.....
Cub Prime Cottonseed Meal	F. W. Brode & Co	Memphis, Tenn.	39.76	40.00	8.02	6.00	.....	10.00
Dove, High-grade Cottonseed Meal	F. W. Brode & Co	Memphis, Tenn.	38.70	38.63	8.35	6.00	.....	10.00
Owl High-grade Cottonseed Meal	F. W. Brode & Co	Memphis, Tenn.	42.73	41.00	9.03	6.00	.....	10.00
Buckeye Prime Cottonseed Meal	Buckeye Cotton Oil Co	Cincinnati, O.	39.03	38.50	8.49	6.50	.....	10.00
Old Gold High Grade Cottonseed Meal	T. H. Bunch Commission Co	Little Rock, Ark.	40.19	38.62	7.52	6.00	.....	8.00

Name of Sample.	Manufactured by	Address.	Protein.		Fat.		Crude Fibre.	
			Found.	Guaranteed.	Found.	Guaranteed.	Found.	Guaranteed.
COTTON SEED MEAL.—*Cont'd.*								
Good Luck Cottonseed Meal	S. P. Davis	Little Rock, Ark.	41.70	41.00	10.50	7.00	.....	10.50
Medium Grade Cottonseed Meal	Enterprise Cotton Oil Co.		39.84	.....	8.37	.....	8.47	.....
Dixie Cottonseed Meal	Humphreys-Godwin Co.	Memphis, Tenn.	42.12	38.62	7.12	6.00	.....	8.00
Forfat Cottonseed Meal	Humphreys-Godwin Co.	Memphis, Tenn.	38.87	38.62	8.94	6.00	11.11	8.00
Peacock Cottonseed Meal	Keeton-McArthur Co.	Atlanta, Ga.	39.93	41.00	6.73	6.00	.....	10.00
Pilgrim Cottonseed Meal	J. E. Soper & Co.	Boston, Mass.	40.89	38.50	7.75	5.00	.....	10.00
Pioneer Cottonseed Meal	J. E. Soper & Co.	Boston, Mass.	42.99	41.00	7.71	7.00	.....	10.00
Cottonseed Meal	Stratton & Co.	Concord, N. H.	28.68	.....	6.64	.....	.....	.....
Creamo Cottonseed Meal	Stratton & Co.	Concord, N. H.	37.83	20.00	6.37	5.00	.....	.....
Cottonseed Meal	Stratton & Co.	Concord, N. H.	42.64	.....	6.50	.....	.....	.....
HOMINY FEEDS.								
Homco Feed	American Hominy Co.	Indianapolis, Ind.	11.12	9.50	8.22	7.00	5.34	7.00
Hiquality Hominy Feed	Donahue-Stratton Co.	Milwaukee, Wis.	10.42	10.00	7.62	7.00	.....	7.00
Buffeco Hominy Feed	Buffalo Cereal Co.	Buffalo, N. Y.	10.86	10.00	6.30	7.00	.....	3.00
Hominy Meal	Chas. M. Cox Co.	Boston, Mass.	10.68	9.50	8.13	7.50	5.02	5.00
Paragon Hominy Feed	Chas. M. Cox Co.	Boston, Mass.	10.59	10.50	6.89	7.50	.....	.....
Badger Hominy Feed	Chas. A. Krause Milling Co.	Milwaukee, Wis.	11.99	10.00	6.79	6.00	5.33	5.00
Hominy Feed	The Patent Cereals Co.	Geneva, N. Y.	11.73	10.00	6.62	7.00	4.39	4.00
Yellow Hominy Feed	The Quaker Oats Co.	Chicago, Ill.	10.24	9.00	7.19	4.00	4.50	4.00
Blue Ribbon Hominy Chop	J. E. Soper Co.	Boston, Mass.	10.42	10.00	6.81	6.00	4.77	5.00
MOLASSES FEEDS.								
Sucrene Dairy Feed	American Milling Co.	Peoria, Ill.	16.55	16.50	5.93	3.50	12.71	12.00
Climax Feed	International Sugar Feed Co.	Minneapolis, Minn.	14.45	12.50	5.79	3.50	11.80	12.00
Special Dairy Feed	International Sugar Feed Co.	Minneapolis, Minn.	15.17	15.00	6.33	3.50	12.98	12.00
Molassine Meal	The Molassine Co., Ltd.	London, Eng.	7.09	7.00	1.77	.75	6.80	7.00
Quaker Dairy Molasses Feed	The Quaker Oats Co.	Chicago, Ill.	15.06	16.00	4.47	3.50	13.86	12.00
Purina Molasses Feed	Ralston Purina Co.	St. Louis, Mo.	9.81	9.00	3.05	1.50	10.81	12.00
POULTRY FEEDS.								
Egg Mash	Blatchfords Calf Meal Factory.	Waukegan, Ill.	17.08	9.00	5.06	4.00	9.89	10.00

POULTRY FEEDS.—*Continued.*							
Wirthmore Poultry Feed	Chas. M. Cox Co.	Boston, Mass.	18.21	17.00	3.79	4.00	5.87	9.50
Queen Poultry Mash	The Albert Dickinson Co.	Chicago, Ill.	11.21	11.60	3.75	2.50	5.18	10.00
Fish Mash	Greene Chicken Feed Co.	Marblehead, Mass.	16.81	12.00	7.53	3.00	.....	.....
Meat Mash	Greene Chicken Feed Co.	Marblehead, Mass.	14.98	12.00	5.82	3.00	7.22	7.00
Hen-o-la Dry Mash	Hen-e-ta Bone Co.	Blairsville, Pa.	12.43	12.00	3.53	2.00	3.58	3.00
Purity Poultry Mash	The Wm. S. Hills Co.	Boston, Mass.	19.14	17.00	6.38	4.00	6.24	8.00
Hoods Dry Mash	H. P. Hood & Son	Derry, N. H.	20.31	18.00	5.72	5.00	7.92	.....
Poultry Mash	McQuestion & Lewis	Manchester, N. H.	18.11	11.00	4.82	2.50	8.47	7.00
Dry Mash	Park & Pollard Co.	Boston, Mass.	18.36	18.00	4.43	3.50	6.82	12.00
Growing Feed	Park & Pollard Co.	Boston, Mass.	15.24	10.00	3.96	3.50	8.63	8.00
Chicken Chowder	Purina Mills	St. Louis, Mo.	17.01	17.00	5.44	3.00	8.68	9.00
Quaker Poultry Mash	The Quaker Oats Co.	Chicago, Ill.	17.31	17.50	5.36	4.00	6.90	10.00
Dry Mash	Stratton & Co.	Concord, N. H.	20.00	18.00	4.11	3.50	10.89	9.00
Oat Feed	Robin Hood Mills, Ltd.	Canada	5.60	7.00	2.79	3.00	23.35	30.00
Ground Oats	J. Cushing & Co.	Fitchburg, Mass.	13.49	.....	5.20	.....	8.25	.....
COMPOUNDED FEEDS.							
Milk Mash	Blatchford's Calf Meal Factory.	Waukegan, Ill.	19.41	20.00	5.17	4.00	.....	7.50
Unicorn Dairy Ration	Chapin & Co.	Hammond, Ind.	29.33	26.00	7.46	5.50	10.05	10.00
Empire State Dairy Feed	Clark Bros. & Co.	Peoria, Ill.	31.18	30.00	11.60	12.00	11.30	9.00
Peerless Dairy Ration	Clover Leaf Milling Co.	Buffalo, N. Y.	22.33	21.00	5.39	7.00	9.36	9.00
Wirthmore Balanced Ration for Milch Cows	Chas. M. Cox Co.	Boston, Mass.	25.57	25.50	5.74	5.20	8.90	9.08
Wirthmore Stock Feed	Chas. M. Cox Co.	Boston, Mass.	10.68	9.00	6.26	4.00	8.54	7.00
Corn and Oat Feed	S. A. Dow	No. Hampton, N. H.	11.03	.....	4.31	.....	3.97	.....
Empire Feed	Empire Mills	Oleon, N. Y.	9.37	7.50	4.98	3.00	7.37	9.00
Provender	Fowler Bros.	Suncook, N. H.	9.98	.....	4.56	.....	4.32	.....
Grendin's Stock Feed	D. R. Grendin Milling Co.	Jamestown, N. Y.	9.02	8.50	5.00	3.50	11.30	10.00
Xtragood Stock Feed	Griswold & Mackinnon	St. Johnsbury, Vt.	11.21	10.00	3.84	3.25	4.18	.....
Dairy Feed	The Gwinn Milling Co.	Columbus, Ohio	16.20	16.00	5.24	4.00	6.81	7.00
Yellow Feed Meal	The Gwinn Milling Co.	Columbus, Ohio	9.28	.....	4.24	.....	1.87	.....
Haskell's Stock Feed	W. A. Haskell & Co.	Toledo, Ohio	9.46	8.00	7.08	4.00	9.70	6.00
Purity Horse Feed	The Wm. S. Hills Co.	Boston, Mass.	9.63	8.50	4.34	3.00	8.21	5.00
Purity Milk Maker	The Wm. S. Hills Co.	Boston, Mass.	22.68	24.00	8.12	8.00	.....	9.00
Purity Stock Feed	The Wm. S. Hills Co.	Boston, Mass.	17.25	10.00	5.81	3.25	13.60	9.00
Re-ground Oat Feed Mill-Run	Robin Hood Mills	Moos Jaw, Sask.	6.31	7.00	2.51	3.50	27.65	30.00
Provender	E. C. & W. L. Hopkins	Greenfield, N. H.	14.71	.....	3.93	.....	3.87	.....
Imperial Steam and Cooked Feed	The Imperial Grain & Milling Co.	Toledo, Ohio	9.60	9.50	4.60	4.00	5.00	4.00
Regal Stock Feed	The Imperial Grain & Milling Co.	Toledo, Ohio	8.67	8.00	3.33	3.50	11.90	13.00
Holstein Feed	Indiana Milling Co.	Terre Haute, Ind.	12.17	12.00	4.09	3.00	13.86	14.00

Name of Sample.	Manufactured by	Address.	Protein.		Fat.		Crude Fibre.	
			Found.	Guaranteed.	Found.	Guaranteed.	Found.	Guaranteed.
COMPOUNDED FEEDS.—*Cont'd.*								
Larro-Feed. The Ready Ration..	The Larrowe Milling Co.....	Detroit, Mich.....	20.84	19.00	4.98	3.00	13.44	14.00
Brooks Fancy Stock Feed.....	A. H. McLeod Milling Co.....	St. Johnsbury, Vt..	9.63	9.00	3.54	3.00	.....	7.50
Blue Ribbon Dairy Feed.....	The Quaker Oats Co.....	Chicago, Ill.....	25.74	25.00	5.54	4.00	10.93	9.00
Daisy Dairy Feed.....	The Quaker Oats Co.....	Chicago, Ill.....	16.03	10.00	5.48	3.50	11.09	14.50
Schumacher Stock Feed.....	The Quaker Oats Co.....	Chicago, Ill.....	10.24	10.00	3.68	3.25	10.31	10.00
Purina Dairy Feed.....	Ralston Purina Co.....	St. Louis, Mo.....	16.90	16.50	3.42	3.00	20.22	15.00
Winner Feed.....	David Stott.....	Detroit, Mich.....	10.68	9.00	6.50	5.00	6.46	10.00
Winner Chop Feed.....	David Stott.....	Detroit, Mich.....	9.87	8.00	6.40	5.00	6.30	10.00
Provender	Stratton & Co.....	Concord, N. H.....	10.86	.....	4.58	.....	4.92	.....
Stock Feed	Stratton & Co.....	Concord, N. H.....	10.42	9.00	5.13	4.00	11.03	9.00
Star Feed	The Toledo Elevator Co.....	Indianapolis, Ind..	8.64	7.00	6.18	5.50	11.85	10.00
Blue Grass Feed.....	A. Waller & Co.....	Henderson, Ky....	16.90	16.50	3.42	3.00	20.22	15.00
Hammond Dairy Feed.....	Western Grain Products Co....	Hammond, Ind....	17.08	16.50	5.63	3.50	.....	11.00
Hammond Horse Feed.....	Western Grain Products Co...	Hammond, Ind....	14.98	12.00	5.08	2.80	10.85	11.00
ALFALFA MEALS.								
Cub Alfalfa	Joseph Breck & Sons.....	Boston, Mass.	12.78	12.00	2.96	1.00	.....	30.00
Pure Alfalfa Meal.....	The Consolidated Alfalfa Milling Co.	Newton, Kans.....	14.10	14.00	3.23	1.20	.....	33.00
Alfalfa Meal.....	The Albert Dickinson Co.....	Chicago, Ill.....	15.00	12.00	3.08	1.00	.....	35.00
Pioneer Alfalfa Meal.....	Kornfalfa Feed Milling Co....	Kansas City, Mo...	15.85	12.00	2.46	1.50	.....	35.00
Pure Dustless Alfalfa Meal.....	The Otto Weiss Alfalfa Stock Food Co.....	Wichita, Kan.....	16.64	14.00	2.43	1.50	.....	30.00
CALF MEALS.								
Blatchford's Calf Meal.....	The Blatchford Calf Meal Factory	Waukegan, Ill.....	23.99	24.00	5.30	5.00	5.82	5.00
Schumacher Calf Meal.....	The Quaker Oats Co.....	Chicago, Ill.....	20.93	19.00	7.63	8.00	1.40	3.00
BEET PULPS.								
Dried Beet Pulp.....	Menominee River Sugar Co....	Menominee, Mich..	8.32	8.00	.75	.50	.....	20.00
Dried Beet Pulp.....	Michigan Sugar Co.....	Alma, Mich.....	8.32	8.00	1.39	.50	18.20	20.00
Dried Beet Pulp.....	Michigan Sugar Co.....	Caro, Mich.....	8.14	8.00	1.46	.50	.....	20.00
Dried Beet Pulp.....	Michigan Sugar Co.....	Saginaw, Mich....	8.38	8.00	1.50	.50	.....	20.00

BEET PULPS—*Continued*								
Dried Beet Pulp	Michigan Sugar Co	Schewaing, Mich	8.58	8.00	1.03	.50	17.50	20.00
Dried Beet Pulp	The Toledo Sugar Co	Toledo, Ohio	9.54	8.00	1.29	.50	.....	20.00
Dried Beet Pulp	West Bay City Sugar Co	Bay City, Mich	8.14	8.00	1.68	.50	.....	20.00
DISTILLERS' GRAINS.								
Ajax Falkes	Ajax Milling & Feed Co	New York, N. Y	30.38	30.00	16.03	11.00	.....	14.00
Brewers' Dried Grains	Farmers' Grain & Feed Co	Chicago, Ill	32.14	.....	1.65	.....	12.80	.....
Eagle DDD Grains	The Dewey Bros. Co	Blanchester, Ohio	28.89	30.00	15.59	10.00	8.04	8.00
Eagle Grains	The Dewey Bros. Co	Blanchester, Ohio	30.63	30.00	14.76	10.00	12.63	9.00
Hester Distillers Dried Grains	Hottelet & Co	Milwaukee, Wis	32.84	30.00	13.75	12.00	12.21	14.00
Crown Brewers' Dried Grains	Milwaukee Grains & Feed Co	Milwaukee, Wis	25.74	25.00	6.89	5.00	13.98	15.00
Union Grains (Ubiko)	The Ubiko Milling Co	Cincinnati, Ohio	24.69	24.00	7.79	7.00	.....	9.00
FLAXSEED MEALS.								
Cleveland Flax Meal	American Linseed Co	Chicago, Ill	35.00	36.00	3.23	2.00	9.19	9.00
Linseed Oil Meal	American Linseed Co	Chicago, Ill	36.34	36.00	3.75	2.00	.....	9.00
Old Process Oil Meal	American Linseed Co	New York, N. Y	34.06	32.00	6.69	5.00	.....	5.50
Old Process Oil Meal	American Linseed Co	New York, N. Y	35.03	34.00	5.97	5.00	.....	8.00
Old Process Oil Meal	American Linseed Co	New York, N. Y	32.49	32.00	7.21	5.00	.....	5.50
Amco. Old Process Linseed Meal	American Milling Co	Superior, Wis	32.45	32.00	8.68	6.00	.....	11.00
Pure Old Process Oil Meal	Kellogg & Miller	Amsterdam, N. Y	33.89	32.00	6.11	4.00	.....	6.00
Old Process Oil Meal	The Guy G Major Co	Toledo, Ohio	34.41	30.00	6.58	5.00	.....	2.00
Pure Old Process Linseed Oil Meal	The Mann Bros. Co	Buffalo, N. Y	32.23	34.00	7.51	6.00	.....	5.00
Old Process Ground Linseed Cake	Midland Linseed Products Co	Minneapolis, Minn.	32.84	32.00	8.03	5.00	.....	9.00
Major Old Process Oil Meal	The Toledo Seed & Oil Co	Toledo, Ohio	31.53	30.00	6.39	5.00	.....	2.00
Old Process Oil Meal	The Toledo Seed & Oil Co	Toledo, Ohio	32.75	30.00	6.35	5.00	.....	2.00
GLUTEN FEEDS.								
Gluten Feed, Cream of Corn	American Maize Products Co	New York	25.04	23.00	2.04	2.50	8.39	8.50
Clinton Gluten Feed	Clinton Sugar Refining Co	Clinton, Iowa	23.12	20.00	3.32	3.00	7.13	8.00
Continental Gluten Feed	Continental Cereal Co	Peoria, Ill	31.53	29.00	12.78	12.50	.....	8.50
Buffalo Gluten Reed	Corn Products Refining Co	New York	24.61	23.00	4.48	2.00	7.23	8.50
Crescent Gluten Feed	Corn Products Refining Co	New York	24.43	23.00	4.80	2.00	.....	8.50
Diamond Gluten Meal	Corn Products Refining Co	New York	39.58	40.00	1.63	1.50	2.35	4.00
Globe Gluten Feed	Corn Products Refining Co	New York	25.57	23.00	2.50	2.00	.....	8.50
Jenk's Gluten Feed	The Huron Milling Co	Harbor Beach, Mich.	22.68	22.00	3.91	3.00	7.93	8.00
P. Bros. Gluten Feed	Piel Bros. Starch Co	Indianapolis, Ind.	25.92	21.00	3.49	2.00	9.48	8.00
Gluten Feed	A. E. Staley Mfg. Co	Decatur, Ill	22.03	20.00	2.45	2.50	8.15	9.00
Staley's Gluten Feed	A. E. Staley Mfg. Co	Decatur, Ill	24.69	23.00	4.16	2.50	8.14	9.00

Name of Sample.	Manufactured by	Address.	Protein.		Fat.		Crude Fibre.	
			Found.	Guaranteed.	Found.	Guaranteed.	Found.	Guaranteed.
WHEAT AND BONE FEEDS.								
Ground Beef Scraps	American Agricultural Chem. Co.	New York	52.98	40.00	10.24	5.00	.....	5.00
Beef Scraps	Beach Soap Co.	Lawrence, Mass.	43.61	40.00	15.08	20.00	.....	7.00
Star-Meat and Bone Meal	Beach Soap Co.	Lawrence, Mass.	32.75	30.00	9.62	10.00	.....	6.00
Animal Meal	Bowker Fertilizer Co.	Boston, Mass.	43.52	40.00	9.10	5.00	.....	15.00
Bowker's Imperial Meal	Bowker Fertilizer Co.	Boston, Mass.	48.04	40.00	10.12	5.00	.....	15.00
Ground Beef Scraps	Jos. Breck & Sons.	Boston, Mass.	44.39	43.00	14.85	12.00	.....	.....
Bone and Meat Meal	Burlington Rendering Co.	Burlington, Vt.	40.72	35.00	14.16	8.00	.....	.....
Poultry Scraps	Burlington Rendering Co.	Burlington, Vt.	42.03	40.00	12.83	8.00	.....	.....
Ground Scraps	Carroll S. Page.	Hyde Park, Vt.	48.00	40.00	29.05	15.00	.....	.....
Beef Scraps	John C. Dow Co.	Boston, Mass.	48.07	43.00	17.09	12.00	.....	.....
Old-Fashioned Meat Scraps	The Greene Chicken Feed Co.	Marblehead, Mass.	37.91	30.00	10.59	5.00	.....	.....
Bone and Meat Meal	Hinckley Rendering Co.	Somerville, Mass.	38.53	35.00	10.02	8.00	.....	.....
Poultry Food	Hinckley Rendering Co.	Somerville, Mass.	38.53	35.00	10.99	8.00	.....	.....
Red Star Fish Scraps	International Glue Co.	Boston, Mass.	53.41	45.00	2.89	2.00	.....	.....
Beef Scraps	A. Lord & Co.	Chelsea, Mass.	33.28	30.00	19.57	17.00	.....	.....
Peerless Poultry Food	Lowell Rendering Co.	Lowell, Mass.	41.59	40.00	16.12	8.00	.....	.....
Cracked Bone	Manchester Rendering Co.	Manchester, N. H.	25.66	20.00	5.24	5.00	.....	.....
Bone and Meat Meal	Manchester Rendering Co.	Manchester, N. H.	36.86	35.00	8.41	8.00	.....	.....
Poultry Food	Manchester Rendering Co.	Manchester, N. H.	39.05	40.00	13.27	8.00	.....	.....
Beef Scraps	The Geo. E. Marsh Co.	Lynn, Mass.	43.59	45.00	14.13	10.00	.....	.....
Poultry Scraps	New England Dressed Meat and Wool Co.	Boston, Mass.	48.51	50.00	14.23	10.00	.....	.....
Ground Fish Scraps	Park & Pollard Co.	Boston, Mass.	58.49	.....	3.08	.....	.....	.....
Portland Poultry Food	Portland Rendering Co.	Portland, Me.	39.93	40.00	13.11	9.00	.....	.....
Beef Scraps	Whitman & Pratt Co.	Lowell, Mass.	45.00	45.00	10.12	10.00	.....	.....
Extra Quality Beef Scraps	Whitman & Pratt Co.	Lowell, Mass.	63.22	55.00	17.80	10.00	.....	.....

TABLE NO. 1

Average Composition of Feeding-Stuffs—Per Cent.

(Henry's, Jordan's and Lindsay's Compilations.)

	Dry Matter	Water	Ash	Protein	Fat	Carbohydrates Nitrogen Free Ext'ct Fibre	
Corn	89.4	10.6	1.5	10.3	5.0	2.2	70.4
Corn Meal	85.0	15.0	1.4	9.2	3.8	1.9	68.7
Corn Bran	90.6	9.4	1.2	11.2	6.2	11.9	60.1
Corn Chops	87.2	12.3	1.5	9.8	4.4	2.0	69.5
Hominy Meal	90.4	9.6	2.7	10.5	8.0	4.9	64.3
Gluten Feed	90.8	9.2	2.0	25.0	3.5	6.8	53.5
Corn and Cob Meal	84.9	15.1	1.5	8.5	3.5	6.6	64.8
Corn Cob	89.3	10.7	1.4	2.4	0.5	30.1	54.9
Oats	89.6	10.4	3.2	11.4	4.8	10.8	59.4
Oat Middlings	91.2	8.8	4.5	16.2	6.9	7.1	56.5
Oat Feed	93.0	7.0	5.3	8.0	2.9	21.5	55.3
Wheat	89.5	10.5	1.8	11.9	2.1	1.8	71.9
Wheat Bran	88.1	11.9	5.8	15.4	4.0	9.0	53.9
Wheat Middlings (shorts)	88.8	11.2	4.4	16.9	5.1	6.2	56.2
Flour Middlings	90.0	10.0	3.2	19.2	4.8	3.2	59.6
Shipstuff	89.1	10.9	5.6	16.3	4.6	7.5	55.1
Barley	89.2	10.8	2.5	12.0	1.8	4.2	68.7
Buckwheat	86.6	13.4	2.0	10.8	2.4	11.7	59.7
Buckwheat Feed	88.4	11.6	3.9	18.3	4.9	19.2	42.1
Brewers' Dried Grains	91.3	8.7	3.7	25.0	6.7	13.6	42.3
Distillers' Dried Grains	92.4	7.6	2.0	31.2	12.2	11.6	35.4
Malt Sprouts	90.5	9.5	6.1	26.3	1.6	11.6	44.9
Flax Seed	90.8	9.2	4.3	22.6	33.7	7.1	23.2
Linseed Meal (O. proc's)	90.2	9.8	5.5	33.9	7.8	7.3	35.7
Linseed Meal (N. proc's)	91.0	9.0	5.5	37.5	2.0	8.9	36.4
Cotton Seed	89.7	10.3	3.5	18.4	19.9	23.2	24.7
Cotton Seed Meal	93.0	7.0	6.6	45.3	10.2	6.3	24.6
Alfalfa Hay	91.6	8.4	7.4	14.3	2.2	25.0	42.7
Dried Beet Pulp	91.6	8.4	4.5	8.1	0.7	17.5	60.8
Meat Scraps	89.3	10.7	4.1	71.2	13.7	...	0.3
Molasses Feed	89.6	10.4	6.5	17.1	2.9	11.9	51.2

TABLE NO. 2.

Average Digestible Nutrients of Feeds—Per Cent.

(Henry's, Jordan's and Lindsay's Compilations.)

	Dry Matter	Protein	Fat	Carbohydrates Fibre	Nitrogen Free Extract
Corn	81.35	7.83	4.30	1.28	65.47
Corn Meal	74.8	6.07	3.46	...	63.29
Corn Bran	63.42	6.05	4.74	6.78	45.68
Corn Chop	78.00	6.95	3.88	1.25	64.38
Hominy Meal	74.13	6.83	7.36	3.28	57.23
Gluten Feed	79.0	21.25	2.87	5.17	47.62
Corn and Cob Meal	67.07	4.42	2.94	2.97	57.02
Corn Cob	52.67	0.4	0.25	19.57	32.94
Oats	62.72	8.78	4.27	3.35	45.74
Oat Middlings	82.08	13.12	6.49	3.48	54.24
Oat Feed	37.20	5.20	2.61	1.88	23.23
Wheat	....	10.2	1.7	69.2	
Wheat Bran	58.15	11.86	2.5	3.69	38.27
WheatMiddlings(shorts)	....	13.0	4.5	1.86	43.84
Flour Middlings	73.8	16.9	4.1	1.15	52.45
Shipstuff	65.04	12.7	4.0	4.65	42.43
Barley	76.71	8.4	1.6	2.10	63.2
Buckwheat	61.49	8.1	2.4	2.81	45.37
Buckwheat Feed	....	15.6	4.4	38.2	
Brewers' Dried Grains.	56.61	20.0	6.0	6.8	25.38
Distillers' Dried Grains	73.00	22.78	11.6	11.02	28.67
Malt Sprouts	70.59	20.3	1.4	9.63	36.37
Flax Seed	69.92	20.6	29.0	4.26	12.76
Linseed Meal(O. proc's)	71.26	30.2	6.9	4.16	27.85
Linseel Meal(N. proc's)	74.62	31.5	2.4	6.59	29.12
Cotton Seed	59.2	12.5	17.3	17.63	12.35
Cotton Seed Meal	71.61	37.6	9.6	2.21	19.19
Alfalfa Hay	....	10.44	0.31	10.00	29.89
Dried Beet Pulp	70.53	4.1	....	12.6	52.29
Meat Scraps	83.05	66.2	13.4	...	....
Molasses Feed	64.51	10.8	2.2	6.55	41.47